



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

NEWS AND NOTES

Dr. Frank D. Kern has been appointed professor of botany in the Pennsylvania State College.

Professor E. J. Durand of Missouri State University was a recent visitor at the New York Botanical Garden.

Professor Mel. T. Cook delivered a lecture in the museum building of the New York Botanical Garden on June 14. The subject of the lecture was "Diseases of Fruit Trees."

Mr. Guy West Wilson, graduate student in Columbia University during the past year, has been appointed special agent by the United States Bureau of Plant Industry for the investigation of the chestnut blight fungus and its relation to tannin and other plant products. He is associated in this work with Professor Mel. T. Cook at Rutgers College, New Brunswick, New Jersey.

The New York Botanical Garden received in July a collection of 213 specimens of fungi and slime moulds from Porto Rico, collected by J. R. Johnston.

The *Botanical Gazette* for June contains an article by Howard S. Reed and J. S. Cooley on the transpiration of apple leaves infested with *Gymnosporangium*. A retardation of transpiration in the diseased leaves has been shown. Since it is known that transpiration and growth are intimately associated it is believed that the decrease in transpiration in the diseased leaves may be one of the factors in determining the bad physiological condition of such trees.

Bulletin No. 281 of the Bureau of Plant Industry of the United States Department of Agriculture contains a discussion by L. L. Harter and Ethel C. Field on a dry rot of sweet potatoes caused by a fungus which has been named by them *Diaporthe Batatatis*. The fungus is thought to represent the perfect stage of *Phoma Batatae* Ellis and Halsted. The fungus is not a vigorous parasite and the disease is principally a storage trouble and is characterized by a drying and shriveling of the potatoes with the pycnidia forming on the surface. In the greenhouse the pycnidia also occur on the leaves and stems as well as the roots of the infected plants.

It is suggested, in order to prevent the spread of the trouble, that diseased potatoes should be cooked before being fed to stock. Diseased potatoes should not be used for fertilizer. Sterilization of seed bed is also suggested. No experiments were conducted in controlling the disease.

In farmers' bulletin No. 544, W. A. Orton summarizes the principal potato-tuber diseases and discusses the best means of eliminating or controlling them and thereby materially increasing the potato yield. It is claimed that the potato yield is only about one half what it might reasonably be expected to be per acre.

In *Science* for July 11 an article appears by Professor H. L. Bolley, of the North Dakota Agricultural College, on the complexity of the microörganic population of the soil. The article is in part an answer to one by E. J. Russell of Rothamsted Experiment Station which appeared in *Science* for April 4.

Professor Bolley agrees with Russell in many of his statements but takes exception to assuming that protozoa are the principal crop-limiting factor in deteriorated soils. Bolley claims that if we have purified seedlings placed in a purified soil they show no tendency to deteriorate. He also claims that species of fungi such as *Fusarium*, *Alternaria*, *Helminthosporium*, etc., in the soil are the real crop-limiting factors, aside from mineral elements and atmosphere, and that crop deterioration is probably a problem of crop sanitation as involved in infectious diseases. According to this theory sterilization is beneficial in that it destroys harmful fungi, the chief crop-limiting factors.

Circular No. 131 of the Bureau of Plant Industry contains a paper by Dr. C. L. Shear and Neil E. Stevens on the culture characters of the chestnut blight fungus and its near relatives. *Endothia parasitica* (Murrill) Anderson & Anderson has as its near relatives, *Endothia gyrosa*, *Endothia radicalis* and a variety of the latter species.

More than two thousand cultures of these fungi were made in order to study the behavior of the various species on different kinds of culture media. The results of these studies indicate that the different species have constant and easily recognized culture characters. *Endothia parasitica* can be distinguished by the peculiar orange-colored surface growth produced at the bottom of the potato agar slants. The early appearance of the orange color of the mycelium is also characteristic and ordinarily sufficient for identification.

On corn meal, *Endothia parasitica* is characterized by numerous small pycnidia and the absence of color changes in the medium. As compared with *Endothia parasitica*, *Endothia radicalis* is characterized by fewer and larger pycnidia which also appear at a later stage and by the perilla purple reaction of the medium; *Endothia radicalis mississippiensis* by the larger pycnidia and the orange chrome color of the mycelium appearing at the end of the week; and *Endothia gyrosa* by its tardy *spore production* and the formation of elevated or subcolumnar pycnidial stromata.

In order to make our herbarium records more complete, the New York Botanical Garden desires fresh specimens of any of the fleshy cup-fungi (Discomycetes) either large or small which are suitable for colored drawings or photographs. Do not hesitate to send specimens because they are "common." The term common as applied to these things is purely a relative term. Species which are common with you may be very uncommon in neighboring localities.

Circular No. 216 of the Forest Service of the United States Department of Agriculture, by W. H. Long, forest pathologist, calls attention to the effect of forest fires on standing hardwood

timber. Scars caused by comparatively insignificant fires furnish gateways through which insects and rot-producing fungi enter the tree. In spite of this fact, it is often claimed that small fires do not injure the forests and the claim is sometimes made that they are even beneficial. Studies made by the author of the article in Arkansas show that the continuous burning of the forests is causing annual losses of thousands of dollars. Most of this loss is caused by the indirect effect of the fire in paving the way for heart rot fungi and harmful insects. Most of these evil effects might be eliminated by coöperation of the people in preventing all fires, both large and small.

A short paper on "The production of a promycelium by the aecidiospores of *Caeoma nitens*" by Otto Kunkel in the July number of the Torrey Bulletin is of especial interest to students of the rusts. *Caeoma nitens*, the common orange leaf rust of the blackberry, has been considered the aecidial stage of *Puccinia Peckiana* Howe, both Tranzschel and Clinton having claimed to establish the connection through infection experiments. Kunkel, however, finds that these aecidiospores are functionally teleuto-spores. On germination they regularly give rise to a septate promycelium and sporidia. The normal promycelium consists of five cells four of which are uninucleated while the basal cell lacks a nucleus. Each nucleated cell produces a sporidium on a sterigma. The sporidia germinate immediately producing either secondary sporidia or germ tubes. Cytological studies of *Caeoma nitens* by Olive and Kurssanow have shown that a uninucleated mycelium precedes the formation of the aecidium and that the binucleated condition is brought about by cell fusions. The aecidiospores are binucleated. Kunkel's further observation on the germination of these aecidiospores suggests that nuclear fusion occurs in the aecidiospore and is followed by the reduction divisions in the promycelium. If this should prove to be the case the mycelium produced by infection with sporidia would be uninucleated and the life cycle of the fungus would be complete. *Caeoma nitens* would thus be a complete rust with a single spore form. This condition would be quite comparable to that found in several species of *Endophyllum* the only essential difference being that in species of

Endophyllum the aecidium is of the cup type. The determination of the complete life history of *Caeoma nitens* must await further infection experiments. It is of interest that this method of germination should have so long escaped detection in such a widely distributed and well known rust.—F. D. Fromme.

*Phytopathology*¹ for June contains a paper by Doctor W. C. Sturgis on *Herpotrichia* and *Neopecthia*. In this paper Doctor Sturgis calls attention to the similarity of *Neopecthia Coulteri* (Peck) Sacc. and *Herpotrichia nigra* Hartig. He mentions having seen only one reference² to *Herpotrichia nigra* in American literature. In this connection it might not be out of place to call attention to a preliminary note on these two species in a report of the conference of the scientific staff and students of the New York Botanical Garden two years ago, as follows:³

“Mr. Fred J. Seaver showed specimens of two fungi (*Neopecthia Coulteri* and *Herpotrichia nigra*?) which occur as parasites on various coniferous trees at high altitudes in the Rocky Mountains. The two fungi are so much alike that they can be distinguished only by microscopic examination of the spores and for this reason the species have been hopelessly confused and most of the specimens in our collections are incorrectly named. So far as our observations have gone the one species (*Neopecthia Coulteri*) occurs only on species of pine, while the other (*Herpotrichia nigra*?) occurs on spruces and firs but never, so far as observed, in America on pine.

“*Herpotrichia nigra* was originally described in Europe and has been reported on both spruces and pines as well as on other coniferous trees. Examination of various European specimens of this species shows the spores to be much smaller than those examined in American specimens. Whether this difference in size which is very marked is due to the fact that the spores are immature is uncertain. Attempts to secure specimens of type material in order to determine the identity of the European species have so far been unsuccessful.

¹ *Phytopathology* 3: 152–158. *pl.* 12, 13. 1913.

² F. S. Earl in *Green's Plantae Bakerianae* 1: 27. 1900.

³ *Jour. New York Botanical Garden* 12: 159. 1911.

“The fact that this European species occurs on both spruces and pines while the American specimens which are thought to be identical does not occur on pine and that this difference in habitat is accompanied by a difference in the size of the spores suggests the possibility that the American specimens may constitute a species distinct from the European.

“The pine inhabiting species of America (*Neopeckia Coulteri*) which is very different from the preceding species in spore characters is unknown to Europe. The results of these studies will appear more in detail in a paper to be published later.”

Notes were in hand for the publication of a more extended paper on this subject with illustrations, but since this has been very well done by Doctor Sturgis it is no longer necessary. The paper covers the ground thoroughly and is accompanied by two plates showing both the gross and microscopic characters of the two species.

In the work on *Herpotrichia nigra* at the Garden some attempts were made to grow the species on culture media. The spores were found to germinate very readily and considerable mycelial growth was produced but no fruiting bodies were formed.—*F. J. Seaver.*